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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,807	05/31/2001	Peter V. Boesen	P03999US8	2090

22885 7590 12/17/2002

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DES MOINES, IA 50309-2721

EXAMINER

HARVEY, DIONNE

ART UNIT PAPER NUMBER

2643

DATE MAILED: 12/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/870,807

Applicant(s)
Boesen

Examiner
Dionne Harvey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (US 5,721,783).

Regarding claim 1, Anderson teaches sensing a bone conduction signal from a bone conduction sensor (12; also see column 26, lines 57-60) disposed within the external auditory canal of a user; transmitting the sensed bone conduction signal from a transmitter(13) to a PDA (see column 5-6 lines 22-25 wherein Anderson teaches that the speech signals are picked up by the earpiece and transmitted to the RPU for processing. The RPU may include straight forward connections to a PDA or voice operated device); and processing the sensed bone conduction signal at the PDA to create a processed audio signal.

Regarding claim 3, in column 25, lines 4-7, Anderson teaches a cellular transceiver.

Regarding claim 4, Anderson teaches transmitting the processed signal from a PDA or other communications device to a receiver(13) and to a speaker(15) disposed within the earpiece.

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Regarding claim 5, in column 26, lines 39-50, Anderson teaches a voice recognition function.

Regarding claim 6, Anderson teaches a voice activation function (see claim 66).

2. Claims 2 and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (US 5,721,783) in view of Ono (US 4,150,262).

Regarding claim 2, Anderson does not specifically teach that the bone conduction sensor is fitted to the contours of the posterior superior wall of the external auditory canal. In figure 7, Ono teaches an earpiece design wherein the bone conduction sensor(25,34) is fitted to the contours of the posterior superior wall of the external auditory canal. Since Anderson teaches that the device may be constructed in any suitable shape and therefore, does not restrict to any particular earpiece design, it would have been obvious for one of ordinary skill in the art at the time of the invention to substitute the earpiece construction of Ono for that of Anderson, thereby providing a bone conduction sensor which is fitted to the contours of the posterior superior wall of the external auditory canal, as an alternate design choice.

Regarding claim 7, Anderson teaches sensing an air conduction signal from an air conduction sensor(12) disposed within the external auditory canal and in a position *proximate* the posterior superior wall of the external auditory canal; transmitting the sensed air conduction signal from a transmitter(13) to a PDA; and processing the sensed air conduction signal at the PDA to create a processed audio signal.

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Anderson does not specifically teach that the air conduction sensor is non-occlusively disposed within the external auditory canal of the user.

Shown in figure 10, Ono teaches that there is a recognized need in the art for providing venting means(35,36,37) in an earpiece device so as to avoid the "occlusion effect". Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the "venting" means of Ono into the earpiece of Anderson so as to avoid the "occlusion effect".

Regarding claim 8, in column 25, lines 4-7, Anderson teaches a cellular transceiver.

Regarding claim 9, Anderson teaches transmitting the processed signal from a PDA or other communications device to a receiver(13) and to a speaker(15) disposed within the earpiece.

Regarding claim 10, in column 26, lines 39-50, Anderson teaches a voice recognition function.

Regarding claim 11, Anderson teaches a voice activation function (see claim 66).

3. Claims 12-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (US 5,721,783) in view of Ono (US 4,150,262) and further in view of Kruger (US 5,692,059).

Regarding claims 12,13 and 19, as set forth in the rejections of claims 1 and 7, above, the combination of Anderson and Ono teaches sensing an air or bone conduction signal from a non-occluding air or bone conduction sensor(12) disposed within the external auditory canal and in a position *proximate* the posterior superior wall of the external auditory canal; transmitting the

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sensed air or bone conduction signal from a transmitter (13) to a PDA; processing the sensed air or bone conduction signal at the PDA to create a processed audio signal; and a receiver (transceiver-13 functions as both transmitter and receiver).

The combination of Anderson and Ono fails to teach the use of both an air and bone conduction sensor.

Kruger teaches the combined use of a bone sensor and air sensor for sensing a wider band of voice frequencies and for better speech intelligibility. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Anderson, Ono and Kruger, thereby using both an air and bone sensor for the earpiece of Anderson, for the reasons taught by Kruger.

Regarding claim 14, the limitations of the claim are rejected for the same reasons set forth in the rejection of claim 2.

Regarding claims 15 and 20, in column 25, lines 4-7, Anderson teaches a cellular transceiver.

Regarding claims 16 and 21, Anderson teaches transmitting the processed signal from a PDA or other communications device to a receiver(13) and to a speaker(15) disposed within the earpiece.

Regarding claim 17, in column 26, lines 39-50, Anderson teaches a voice recognition function.

Regarding claim 18, Anderson teaches a voice activation function (see claim 66).

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Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne Harvey whose telephone number is (703) 305-1111. The examiner can normally be reached on Monday through Friday from 8:30am to 6:00pm.

Any responses to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC 20231

or faxed to:

(703) 308-6306, for formal communications for entry

Or:

(703) 308-6296, for informal or draft communications, please label "PROPOSED" or "DRAFT".

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor(Receptionist)

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached at (703) 305-4708.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne Harvey whose telephone number is (703) 305-1111.

D.H.

December 12, 2002

R. Barnie
REDFORD N. BARNIE
PATENT EXAMINER